Dr. Theodore Thomson's Report to the Local Government Board on Cholera in the Borough of Rotherham in 1893.

W. H. Power,
Assistant Medical Officer,
March 19th, 1894.

On September 5th, 1893, the Board received from the Medical Officer of Health of the Borough of Rotherham a telegram stating that on that day a case believed to be Asiatic cholera had occurred in his district, and that the person thus attacked had succumbed to the disease. Communication hereupon took place by telegram between the Board and the Medical Officer of Health as to steps to be taken with the view of definitely ascertaining the true nature of this person's malady; and in consequence a portion of the lower bowel (ileum) of the deceased was on the 6th September forwarded to Dr. Klein for bacterioscopic examination. As a result of Dr. Klein's investigations it appeared (7th of September) that the case was indistinguishable from true cholera; and I was accordingly instructed to proceed forthwith to Rotherham for the purpose of making inquiry into the circumstances attendant on the illness of the deceased, and to report also as regards the steps that were being taken by the Sanitary Authority with the view of preventing spread of cholera. I visited Rotherham on September 8th, and from inquiries made then, and subsequently, ascertained the following facts.

William B., collier, 35 years of age, residing in Tummon Street, Masbro' (in the borough of Rotherham), was in his usual health on September 4th. On the morning of September 5th he rose at 5 o'clock and had a loose motion. Afterwards he partook of breakfast as usual, and at 8 o'clock set out with a friend on a fishing expedition to a neighbouring stream. On the way he was attacked with vomiting and diarrhœa, but nevertheless continued his journey. On the banks of the stream he was seized with severe diarrhœa, vomiting and cramps, so that he had to be conveyed home in a cart. He reached home about 2 p.m., and was there seen by a medical man shortly afterwards. He was then, it is stated, in a condition of collapse, with pulse imperceptible at the wrist, extremities cold, face pinched and dark in colour. There was no further sickness or diarrhœa after he reached home; but the condition of collapse continued, and he died at 7 p.m.

Subsequently the following cases certified as cholera by their medical attendants occurred in the borough.

On September 11th: John W., Arthur Street, aged 50 years.

On October 18th: George N., Sales Yard, aged 39.

Of these two additional cases one died while the other recovered. The case of September 11th was that which proved fatal.

In all, therefore, three cases certified as cholera are known to have occurred in the autumn of 1893 in the borough; and of these three two had a fatal result. There was no localisation of the disease in any particular portion of the district; the residences of these three persons were widely separate.

In addition, however, to these cases certified as cholera there occurred in Rotherham other 18 cases certified as "choleraic diarrhœa." The distribution of these in time was as follows:—

On September	15th	were notified	4	cases.
,, ,,	18th	was ,,	1	case.
,, ,,	19th	were ,,	2	cases.
,, ,,	20th	,, ,,	2	,,
,, ,,	24th	was ,,	1	case.
,, ,,	26th	,, ,,	1	,,
,, October	2nd	,, ,,	1	,,
,, ,,	6th	,, ,,	1	,,
,, ,,	7th	,, ,,	1	,,
,, ,,	9th	were ,,	2	cases.
,, ,,	14th	was ,,	1	case.
,, ,,	18th	,, ,,	1	,,
Total	-	-	18	cases.

As regarded two only out of these 18 persons attacked by choleraic diarrhœa was bacterioscopic examination of stools resorted to; but with the result that both cases were declared indistinguishable from true

E 79985. 220.—3/94. Wt. 21548. E. & S.

cholera. These two were notified (as choleraic diarrhœa) on October 2nd and October 6th respectively. With the single exception of the case notified on October 6th, which proved fatal, all the notified cases of choleraic diarrhœa recovered. Of these 18 cases, 15 were between the ages of 25 and 60, two between the ages of 5 and 14, and one was 1 year of age. There was no exceptional incidence of this "choleraic diarrhœa" on any one part of Rotherham; the cases were, on the contrary, scattered throughout the district with tolerable equality.

In view of this cholera and "choleraic" diarrhœa in Rotherham in 1893, it becomes of interest to note also the amount of illness designated as diarrhœa which existed in the district in that year. And first as to the number of *deaths* attributed to this cause in Rotherham during the second and third quarters of 1893. Of these there were 85, a number which is in excess of the total deaths from this cause in Rotherham in any complete year during the preceding decade. The appended table (Table I.) affords means of comparing year by year the death-rates in Rotherham from diarrhœa during the period 1883–93, and also allows contrast of the Rotherham diarrhœa death-rates with those of the 28 large towns.

TABLE I.

SHOWING the NUMBER of DEATHS referred to DIARRHŒA in ROTHERHAM during each of the Ten Years 1883–92, and in the Second and Third Quarters of 1893, together with the resulting DEATH-RATES per Thousand living in each instance. For purposes of comparison the Death-rate yearly from the same cause in 28 large Towns during the same period is added.

Year.	Rotherham.				28 Large Towns.	
	Population.	No. of Deaths from Diarrhœa.	Death-rate per Annum from Diarrhœa per 1,000 living.	Diarrhœa Death-rate in Period 1883–92.	Death-rate per 1,000 from Diarrhœa.	
					In each of the Years 1883-92.	1883–92.
1883 - -	36,301	8	0·22		0·77	
1884 - -	36,998	42	1·14		1·21	
1885 - -	37,707	29	0·77		0·69	
1886 - -	38,431	41	1·07		0·97	
1887 - -	39,168	42	1·07	0·88	0·97	0·82
1888 - -	39,920	21	0·53		0·60	
1889 - -	40,685	66	1·62		0·82	
1890 - -	41,466	40	0·96		0·77	
1891 - -	42,261	37	0·87		0·67	
1892 - -	43,072	22	0·51		0·70†	
Second and third quarters of 1893.	43,898	85	1·94*		1·07†	

* This is the rate per 1,000 living calculated not for the whole year, but for six months only.
† This rate is calculated on 33 large towns, not on 28 large towns, as in the remainder of the column.

From these figures it appears that during the decade 1883–92 the death-rate from diarrhœa in Rotherham was slightly in excess of the death-rate from the same cause in the 28 large towns during that period. Also it appears that the Rotherham diarrhœa death-rate exceeded the average annual rate for that town, in 1884, 1886, 1887, 1889, 1890, and again in 1893. Prior to 1893 the highest point reached by the rate was in 1889, when it was 1·62 per thousand per annum. But in 1893 the rate is seen to be considerably in excess of this, inasmuch as it is 1·94 per thousand for a period of six months only. It is true that within that period fall those portions of the year during which diarrhœa most prevails; nevertheless, the figures for the whole year will, it may safely be assumed, give a rate at least somewhat in excess of that quoted. The death-rate from diarrhœa in the country generally, however, was in the summer of 1893 above the average; and, accordingly, I append a table (Table II.), which affords means of comparing the death-rate from this cause in the borough of Rotherham with that from the same cause in the large towns and in England and Wales in the second and third quarters of 1893.

TABLE II.

SHOWING the DIARRHŒA DEATH-RATE per Thousand PERSONS living per annum in ROTHERHAM, in 33 large Towns, in 67 other large Towns, and in ENGLAND and WALES in the Second and Third Quarters of 1893.

Area.	Second Quarter, 1893. — Diarrhœa Death-rate per 1,000 per Annum.	Third Quarter, 1893. — Diarrhœa Death-rate per 1,000 per Annum.
Rotherham - -	1·02	6·74
33 large towns -	0·81	3·5
67 other large towns -	0·61	3·8
England and Wales -	0·52	2·8

From these figures it appears that both in the second and in the third quarter of 1893 the death-rate from diarrhœa in Rotherham was far higher than in the large towns or in England and Wales ; indeed in the third quarter the death-rate in Rotherham was nearly twice as heavy as the mean rate of other towns. There was, therefore, not only an exceptionally heavy diarrhœa death-rate in Rotherham in 1893 as compared with its own previous records, but also as compared with the rates of the large towns and of the country generally for the second and third quarters of that year.

In the absence of returns of *cases* of diarrhœa—which is not one of the diseases scheduled by Rotherham for compulsory notification—no definite information is forthcoming as to the number of persons attacked by this malady during the whole of the period embracing the second and third quarters of 1893. But, after the appearance of cholera in the place, the Town Council of Rotherham requested the members of the medical profession practising in the borough to notify for the time being all cases of diarrhœa that they were called on to attend ; and accordingly I am in this way able to give a list of the number of cases of diarrhœa that came to the knowledge of the Sanitary Authority from September 10th to October 31st. This information is supplied in the following table (Table III.) :—

TABLE III.

SHOWING the NUMBER of CASES of DIARRHŒA notified in ROTHERHAM Day by Day during the Period September 10th to October 31st, 1893.

1893.		1893.		1893.	
September 10 -	13	September 28 -	5	October 16 -	4
„ 11 -	30	„ 29 -	2	„ 17 -	1
„ 12 -	39	„ 30 -	1	„ 18 -	4
„ 13 -	10	October 1 -	0	„ 19 -	4
„ 14 -	18	„ 2 -	8	„ 20 -	2
„ 15 -	25	„ 3 -	8	„ 21 -	1
„ 16 -	15	„ 4 -	4	„ 22 -	9
„ 17 -	4	„ 5 -	3	„ 23 -	1
„ 18 -	14	„ 6 -	12	„ 24 -	7
„ 19 -	18	„ 7 -	3	„ 25 -	8
„ 20 -	25	„ 8 -	1	„ 26 -	3
„ 21 -	11	„ 9 -	4	„ 27 -	1
„ 22 -	9	„ 10 -	8	„ 28 -	0
„ 23 -	5	„ 11 -	2	„ 29 -	6
„ 24 -	1	„ 12 -	4	„ 30 -	9
„ 25 -	2	„ 13 -	3	„ 31 -	3
„ 26 -	15	„ 14 -	0		
„ 27 -	10	„ 15 -	7	Total -	402

Comparison of the figures in this table with those given on page 1 regarding "choleraic" diarrhœa, shows that the period at which the latter was most prevalent was also that at which diarrhœa cases were most numerous. Thus during the 11 days September 10th to 20th half the known cases of choleraic diarrhœa were notified, while during the same period 211 out of the 402 cases in Table III. were notified.

Notwithstanding this coincidence,— which might be thought of as lending support to a thesis that this excessive diarrhœa prevalence had had relation to the presence of cholera in the district,*—analysis of the ages of persons attacked by, or dead of, diarrhœa does not go to show that there was in Rotherham in 1893 any departure from the type of summer

* It should be borne in mind that the absence of definite information as to amount of diarrhœa *attacks* in Rotherham, prior to September 10th, materially limits the value of the data given in Table III.: that, indeed, diarrhœa attacks may have been more numerous prior to September 10th than any time in September or October. As matter of fact the amount of *deaths* from diarrhœa in Rotherham was greater in both July and August than in September.

diarrhœa usually seen in this country. In the following table (Table IV.) the *deaths* attributed to diarrhœa in Rotherham in each of the ten years 1883–92 and in the second and third quarters of 1893 are classified according to age.

TABLE IV.

SHOWING Year by Year for the TEN YEARS 1883–92, and for the SECOND and THIRD Quarters of 1893, the NUMBER of DEATHS in ROTHERHAM attributed to DIARRHŒA, classified according to their Ages.

Year.	No. of Deaths at all Ages.	No. of Deaths of Persons over 60 Years of Age.	No. of Deaths of Persons 25–60 Years of Age.	No. of Deaths of Persons 15–25 Years of Age.	No. of Deaths of Persons 5–15 Years of Age.	No. of Deaths of Persons 1–5 Years of Age.	No. of Deaths of Persons under 1 Year of Age.
1883	8	—	—	1	—	—	7
1884	42	2	—	—	1	10	29
1885	29	3	—	—	—	6	20
1886	41	2	2	—	—	8	29
1887	42	3	2	—	—	8	29
1888	21	6	2	1	—	3	9
1889	66	2	4	—	—	12	48
1890	40	3	—	—	1	8	28
1891	37	2	—	1	—	2	32
1892	22	—	2	—	—	3	17
2nd and 3rd quarters of 1893.	85	4	—	—	—	24	57

From the figures of Table IV. it will be perceived that the age distribution of diarrhœa deaths usually observed in this country was not departed from in Rotherham in the second and third quarters of 1893. As in other years deaths from this cause were most abundant under five years of age, and next at ages over 60; indeed in these two quarters of 1893 all the deaths attributed to diarrhœa in Rotherham were included within those age groups.

Inquiry was also made as regards the incidence of diarrhœa *attacks* on certain age-groups. No definite conclusions, however, were permissible on the figures when formulated; partly because of the brief period during which cases of diarrhœa were being notified, with consequent small range of facts acquired; and partly because of the absence of reliable standard data of similar sort which would afford means of comparison with the Rotherham figures. Nevertheless, it may be noted that the incidence of known diarrhœa attacks in Rotherham in 1893 was, as elsewhere, found mainly on the very young. In a general way, therefore, the age-distribution of diarrhœa attacks coincided with the age-distribution of deaths from this malady; and the balance of evidence went to indicate that in Rotherham in 1893 diarrhœa did not appreciably depart from the usual type of summer diarrhœa in this country.

Further, there was no special incidence of the diarrhœa on any particular locality, whether judged of by distribution of deaths in the second and third quarters, or by distribution of the attacks known to have occurred from September 10th to October 31st.

With reference to the question of possible parallelism in this district during 1893 of diarrhœal diseases and enteric fever, I was able, enteric fever being among the diseases notified in the borough, to obtain a statement of the cases notified from January 1st to November 15th, 1893; and with result as follows:—

January:	Number of cases of enteric fever notified	-		2
February:	,,	,,	-	3
March:	,,	,,	-	5
April:	,,	,,	-	3
May:	,,	,,	-	3
June:	,,	,,	-	4
July:	,,	,,	-	5
August:	,,	,,	-	6
September:	,,	,,	-	11
October:	,,	,,	-	13
November 1st to 15th	,,	,,	-	4
	Total	- -	-	59

From these figures it is evident that although there was no exceptional prevalence of enteric fever in Rotherham in 1893, yet such as occurred was in the main coincident in time with the observed major incidence of choleraic disease. But as with choleraic disease and with diarrhœa, so also with enteric fever, there was no exceptional prevalence in any particular locality of the district.

Causation of the Choleraic Outbreak.

In searching for a cause of cholera in Rotherham, attention was in the first instance directed towards ascertaining in what way the disease might have been imported into the town. To this end careful inquiry was made into the habits and previous movements of the person attacked on September 5th, who was the first recognised case of cholera in the borough. But investigations in this sense failed to reveal that this man had, on any occasion during several weeks preceding his attack, been out of Rotherham or its immediate neighbourhood; or that anyone other than inhabitants of the district had during that period visited his residence. Especially were inquiries made as to whether he had, during certain days antecedent to his attack, visited any place where cholera was known or suspected to exist; and as to whether he had had any sort of relation, direct or indirect, with any person who had suffered from illness bearing suspicious resemblance to cholera. But all evidence obtained on these points was of a negative character. It did not appear that he had visited any locality where choleraic disease existed; and no fact was ascertained tending to show that he had received any article by which cholera infection might possibly have been conveyed to him. It could not be discovered that he had, during days immediately preceding September 5th, partaken of any article of food or drink as to which there were grounds for suspecting that it might have served as medium of introduction of the disease.

In default of affirmative evidence on these points, search was made for cases of cholera unrecognised but existing in Rotherham prior to September 5th. These inquiries resulted in the discovery of the fact that a woman named Mary B., aged 29, residing in Clough Road, Rotherham, died on August 24th, after a few hours' illness, the symptoms of which are stated to have been abdominal pains and collapse, without sickness or diarrhœa. The medical attendant, who saw her for a few moments only and when she was already moribund, certified the death as having been "due to natural causes." This woman had, with several friends, spent the preceding day (August 23rd) at Grimsby and Cleethorpes, where cholera was then occurring. Of the party she alone had partaken of oysters on the sands at Cleethorpes. With the exception of this woman, no person was discovered to have suffered from any malady showing symptoms which there was any ground at all for attributing to cholera. The woman in question resided in a house some 500 yards distant from that inhabited by the man attacked on September 5th; but there does not appear to have been any communication between the two households.

So, too, as regards the question of subsequent maintenance of the disease in Rotherham having been due to personal communication. Negative results were obtained on inquiry into the circumstances of the cholera cases that afterwards occurred in the district. In the instance of all cases of cholera, and almost all cases of choleraic diarrhœa, there was no evidence of communication between members of invaded households.

In the absence of data pointing to maintenance of the disease by personal communication, the other conditions, which might have had concern with the cholera and choleraic diarrhœa witnessed, were in turn considered. In this way were passed in review the general sanitary circumstances of the district, the sewerage and drainage of the borough, the methods there adopted for disposal and removal of excrement and refuse, and, in addition, the milk supply and the water service.

General Sanitary Circumstances of the District.—The town of Rotherham is for the most part situated on hilly ground, draining to the Rivers Don and Rother, by which it is intersected. It lies on the Middle Coal Measures, with a considerable amount of rock approaching near to or cropping out on the surface; only alongside the Don and the Rother is found alluvial deposit. The soil immediately overlying the coal measures and rock is, to a degree greater than is the case in many other towns, exposed to fouling. This exceptional liability to fouling is due to soakage from privy middens. The inhabited dwellings in Rotherham are mostly working class houses, and in fairly good condition. Save for the pollution of the soil by leaky privy middens, the general sanitary circumstances of Rotherham are fairly good, and are not of a nature to distinctly favour dissemination of cholera.

The Sewerage and Drainage arrangements of Rotherham are for the most part satisfactory. In large majority the sewers are well constructed, have a proper gradient, and are provided with sufficient means of ventilation. One area only, of small size, is unsewered, and drains into cesspools and into the River Don. House drains are in most instances properly constructed of sanitary pipes. The ventilation of these, however, is not infrequently insufficient. Almost all yard and sink pipe gullies are trapped, and sink

pipe and other waste water pipes are, in the vast majority of cases, disconnected from the drains to which they discharge.

These facts are not such as to encourage the thesis that in Rotherham infection by sewers may have been the mode of propagation of diarrhœal disease; and in further contradiction of such an hypothesis, it is to be noted that there was no exceptional incidence of cholera, choleraic diarrhœa, or diarrhœa along the line of any particular sewer or sewers.

Excrement and Refuse Disposal and Removal.—The prevailing system of excrement and refuse disposal in Rotherham is the privy midden, the pit of which is usually sunk 2 or 3 feet below the ground level. The contents of these middens are often wet, and, from the structure of the pit, are frequently liable to percolate into and foul the surrounding soil. In the comparatively few instances where water-closets have been constructed, house refuse is stored in moveable receptacles or in brick ash-pits. Excrement and house refuse are in part disposed of to neighbouring farmers, and in part incinerated by a destructor.

In the midden system above described there is nothing, apart from the indirect effect of soil pollution by leakage from privy middens, tending to suggest connection between this method of excrement and refuse disposal and the appearance of cholera in the district. It must not be overlooked, however, that leaky privy middens would not only pollute the ground on which the town stands, but would also, in the event of their contents becoming specifically infected by cholera excreta, transmit this contagium to the surrounding soil, where it might multiply and be in various ways conveyed throughout the district. That cholera was thus fostered in Rotherham in 1893 is not affirmed; there is no positive evidence on the subject. But this danger nevertheless exists, and should not, as I have said, be lost sight of.

The Sources of the Milk Supply to houses invaded by cholera, choleraic diarrhœa, and diarrhœa were duly ascertained, but nothing appeared tending to throw suspicion on any one supply.

The Water Service of Rotherham still remains to a great extent in the unsatisfactory condition described by me in my report on an outbreak of enteric fever in that and in two neighbouring districts in 1891. Notably the Wellgate Spring, a water of which the quality is open to the gravest suspicion, still formed, at the date of appearance of cholera in that place, part of the public water service of the borough.

Notwithstanding, however, the unsatisfactory nature of this supply as a whole, it does not appear to have been a dominant factor in the dissemination of cholera and choleraic diarrhœa in the district. For there are within the borough two areas of water supply, known as the "high level" area and the "low level" area, each with a population of something over 20,000. These two areas are supplied by water taken from different sources, one of which is decidedly more unsatisfactory than the other; and upon the assumption that water had acted as the medium of propagation of the disease, exceptional incidence was perhaps to be looked for in that one of the two districts of which the water supply was most liable to become specifically polluted. This, however, was not the case; there was, indeed, almost equal incidence of cholera, choleraic diarrhœa, and diarrhœa in the persons inhabiting the "high level" and "low level" areas of water supply. This fact does not absolutely exclude water as a causative agent, but is undoubtedly in favour of the thesis that water had no important concern with the cholera, choleraic diarrhœa, or diarrhœa witnessed.

Action taken by the Sanitary Authority.

The Sanitary Authority displayed commendable promptitude and energy in dealing with cholera when it appeared in their district. A ward block in the Borough Hospital for Infectious Diseases was set apart for the isolation of persons attacked by cholera or choleraic diarrhœa; while another ward block was reserved for the reception of unattacked members of invaded households, in order that these persons might for a time be kept under observation. All articles that had been exposed to infection of cholera were either destroyed or disinfected by steam under pressure; invaded houses were fumigated with sulphur, their wall-papers stripped off, and the walls, floors, and woodwork of the dwelling washed with a strong solution of carbolic acid. The drains of invaded houses were tested and subsequently well flushed. In the event of unattacked inhabitants of invaded dwellings not accepting the offer of shelter at the Borough Hospital, their houses were daily visited by officers of the Sanitary Authority for some time after invasion, in order that the health of the remaining members of the household might be watched. All houses in the immediate neighbourhood of an invaded dwelling were visited by officers of the Sanitary Authority, who made inquiry as to the past and present health of the occupants. These steps were also taken with regard to members of all households in other parts of the borough who had recently visited or been visited by members of an invaded family.

In addition to the foregoing precautions, adopted consequent on the occurrence of each case of choleraic disease, the Sanitary Authority made

the following arrangements. A circular was issued (on September 9th) by the Town Clerk of Rotherham to all medical men practising within the borough, requesting them to notify immediately to the Medical Officer of Health (with statement as to age of person attacked) any case of diarrhœa that might come under their attention, and intimating that the ordinary notification fee (2*s.* 6*d.*) would be paid for each diarrhœa case notified. On September 11th a further circular was issued by the Medical Officer of Health to medical practitioners enclosing a number of orders for gratuitous supply of disinfectants to be furnished by the Sanitary Authority. This second circular requested each practitioner to give these orders to such of his patients as should, in his opinion, have need for use of disinfectants. On the same date were printed placards setting forth sundry "urgent sanitary precautions" to be taken in the then emergency. These placards, to the number of 250, were posted throughout the town, but more particularly in courts and alleys. Arrangements were also made to ensure the visiting, immediately on receipt of notification, of every house invaded by cholera, choleraic diarrhœa, or diarrhœa, by an officer of the Sanitary Authority, whose duty it was to see that in every instance proper steps were taken in dealing with these diseases.

It would appear then as a result of this investigation that the cholera in Rotherham in 1893 was of but brief duration. Also that it was of small amount, unless indeed the coincident prevalence of diarrhœa, which was exceptionally great, is to be considered as in some sort related to the choleraic disease. No satisfactory evidence was obtainable as to the date at which cholera first invaded the district, or as to the manner in which it was introduced. Equally indefinite is the information respecting the means by which the disease was maintained in Rotherham subsequent to the occurrence of the first known case.

But, though the results of inquiry as to the origin and maintenance of cholera in Rotherham be indefinite and unsatisfactory, the lessons to be learned by the Sanitary Authority are not the less of importance or less deserving of serious attention. It is clear that the sanitary condition and organisation of a district must be of a high order to enable the Local Authority to successfully cope with a malady which may appear one knows not certainly whence, and be maintained one knows not certainly how. To the sanitary organisation of Rotherham I have already referred favourably; it is, indeed, susceptible of improvement, but stands less in need of reform than does the sanitary condition of the district. In two respects particularly does the latter call for unfavourable comment. One of these is the fouling of the ground on which the town stands; fouling which must of necessity be inseparable from existence within the borough of numbers of wet and leaky privy middens. The other is the unsatisfactory nature of the public water supply. That this supply should be in part derived from gathering grounds of which the conditions are such as to render possible dangerous pollution of the water thence collected, is a matter of great gravity. But that a supplementary source of this supply should be a spring, which rises in the very centre of the town and, therefore, emerges through a soil polluted by the contents of privy middens, is a condition of distinctly perilous sort. Rotherham had in 1891 actual experience of loss of life and health from fever due to specific pollution of the public water supply; but the Sanitary Authority do not appear to have profited by the lesson. In 1893 cholera made its appearance in the district, but fortunately did not, as was formerly the case with enteric fever, obtain intimate relation with the public water supply. In this there was for the Sanitary Authority matter of congratulation; but there should also be food for reflection. Let them consider seriously the responsibility for lives lost and health destroyed that will be theirs should the lesson of 1891 be repeated in 1894 with cholera in place of enteric fever as the polluting agent of the public water supply of the district confided to their charge.

THEODORE THOMSON.

January 6th, 1894.

Dr. ARMSTRONG had always regarded it as an anomaly—of which London set the most glaring example—that people should go beyond their own district to provide a hospital. London had no right, and it was ridiculous that she should send her infectious cases to the river. On the Tyne there had always been a floating hospital. It was built on a pontoon, and contained 30 beds for infectious cases, and cases from the river only were admitted. The Port Authority was, however, making accommodation for 100 beds next year for shore patients. The foundations and drainage were already complete, and the new building would be erected immediately a case of Cholera occurred on shore.

Dr. WYNNE stated that at Lowestoft they were caught in an unprepared state. They decided against a floating hospital, and had an old wooden building run up. He had since recommended a corrugated iron building to contain 12 beds, but a desire for economy had led the Port Authority to be satisfied with a four-bedded hospital, which had up to the present been sufficient. He was opposed to a floating hospital, because some of the Cholera discharges might find their way into the river.

Dr. ARMSTRONG said the same thing might occur in the case of a hospital on shore. The Cholera discharges should in each case be rendered innocuous.

The CHAIRMAN said it was hopeless to dream of coming to a decision there on the question of land or floating hospitals. He was not prepared to take up floating hospitals generally. Such places might be of use temporarily when dealing with Cholera, but for the permanent treatment of disease, he would not for a moment consider the question of floating hospitals.

(20) Dr. MASON moved—"**That it is the imperative duty of every Port Sanitary Authority to provide forthwith proper special hospital accommodation for the treatment of Cholera, and for the isolation of suspected cases.**"

Dr. MALCOMSON seconded the motion, which was carried.

Dr. DAVIES (Bristol) moved that the Sub-Committee appointed should also be asked to consider what the proportion of hospital accommodation should be to the tonnage of the port.

The CHAIRMAN said the Sub-Committee would have a sort of roving commission, and would deal with this and other subjects.

THE COST OF CHOLERA PRECAUTIONS.

The CHAIRMAN said the next question—at whose expense should Port Cholera Defences be maintained?—was a very serious one, even for large towns. It was a serious question for London, where the keeping up of defences against Cholera, which had not appeared, involved an extra expenditure of about 2,000*l.* a year; but as long as the system was worked on an economical footing nobody cared, because money spent in combating an epidemic was money well spent. The precautions must be kept up during next year; but already there were very marked signs that unless some relief were given by the Government, the smaller ports would not be able to maintain the precautions that were necessary, in which case grave danger would ensue. This was becoming a serious question, and it was one on which the Conference ought to give a decided opinion one way or the other.

Dr. MALCOMSON said the strongest instruction he received from the Port Sanitary Authority he represented was on this subject of expense. It bore peculiarly hard upon

Dr. DAVIES (Bristol) : Some of the larger boats have not got quarantine flags. One day I saw a blue flag flying, and when I spoke to the master he said he had not got a yellow flag, and that was the nearest colour he had.

Dr. MASON felt that this question of the hoisting of flags was an exceedingly difficult one. At Hull they gave instructions that all vessels arriving from infected ports should hoist the yellow flag, but they had 20 steam trawlers weekly trading into the port from Hamburg. These trawlers were stopped, and it was found that their masters were ignorant of the conditions of quarantine.

Dr. HARRIS suggested that notices should be sent to shipping agents asking them to communicate with foreign ports.

Dr. DAVIES (Bristol) : I found that we had to give information to several sources, and even then masters would come up and say they knew nothing about it. The information must also be published in the *Shipping Gazette.*

The CHAIRMAN : The question is, should fishing vessels be brought under the same regulations as all other vessels ? I do not think there can be any difference of opinion on that point. Secondly, are you going to insist upon the quarantine flag, or its equivalent, being hoisted ? I think it is best to pass a general resolution that powers should be given to compel the display of a quarantine flag in the case of every vessel arriving from an infected port, but that will not deal with the question of what are infected ports.

Dr. DAVIES (Bristol) : Would you include home ports as well as foreign ports ?

Dr. ARMSTRONG : Yes, I should say every port.

(13) Dr. DAVIES (Swansea) moved—"**That power be obtained to require all ships (including fishing boats) coming from or having been in communication with infected or suspected ports, to hoist a distinguishing signal on arrival, and that such regulations be published by the Customs' Authorities of English ports, and be enforced by them.**"

Dr. WYNNE seconded the motion, which was adopted ; a further proposal that this regulation should apply to British ships in foreign ports being negatived, the Chairman remarking that it would be far too wide.

(14) Dr. ARMSTRONG moved—"**That a return be obtained from each Port Medical Officer, showing the state of preparedness of his Authority with reference generally to the sanitary arrangements of the port, and that a copy thereof be forwarded to each Port Sanitary Officer.**"

Dr. GRIFFITH seconded the motion, which was agreed to.

The CHAIRMAN announced that he would be glad to co-operate with other Port Medical Officers in supplying such information.

On the suggestion of Dr. HARRIS, it was decided that the information should be invited from the Clerk to the Sanitary Authority, and it was further resolved that in the returns a distinction should be drawn between ships coming from foreign and home ports.

The CHAIRMAN, in answer to a question, said the information would, of course, be regarded as private, and would not be published.

QUARANTINE.

The CHAIRMAN said that quarantine was a matter that would at once be dealt with by the Conference. The only question was—Is it ever desirable or practicable for this country? What did they mean by quarantine, before they said a word about it? They meant the detention of a vessel coming from an infected port, and if it was understood that there was no disease on board such a vessel they unanimously pronounced against quarantine. But no vessel was "healthy" until she had been inspected.

Dr. WILLIAMS thought the period of detention ought to be limited.

(15) Dr. DAVIES (Bristol) moved—"**That in the opinion of this Conference, quarantine, or the detention of a vessel having no sickness on board, and so certified by the Medical Officer of Health, is unjustifiable.**"

Dr. MASON seconded the motion. He said he was no believer in quarantine, because it was a false state of security, and experience at Hull had satisfied him that while a ship remained in dock she should be medically inspected twice a day.

Dr. ARMSTRONG urged that it was the bounden duty of Port Medical Officers to say that quarantine was not to be relied upon, and that they should not attempt it.

Dr. DAVIES (Swansea) and Dr. WYNNE also agreed that quarantine was useless as a preventative against Cholera.

The resolution was unanimously adopted.

ADDRESSES OF DESTINATION.

The next question was as to addresses of destination, and the CHAIRMAN said that the present system required by the Local Government Board was absurd and roundabout. The first suggestion on the paper was that the addresses of destination should be transmitted from Medical Officers of Health to Medical Officers of Health.

(16) Dr. WILLIAMS proposed—"**That the Local Government Board be approached with reference to altering the regulations as to forwarding addresses, in order that Medical Officers of Health may communicate directly with the Health Officer of the district to which the passengers or sailors are proceeding.**"

Dr. MASON seconded the motion.

The CHAIRMAN said that in the Port of London when a ship came in with the names and addresses of her passengers and crew all ready, she was immediately inspected by the Medical Officer, and if she had not got the list ready, preference was given to the next ship. That arrangement had had the desired result, and one effect had been to check Jewish pauper immigration. Fully 30 per cent. of the names and addresses at first taken were found to be false, and the Port Sanitary Authority therefore decided to issue forms on which the name and address given by each person was written. When the form was filled up it was sent to the Sanitary Authority of the district in which the person said he resided, and that Authority was informed that he was detained on board the ship pending the verification of the address. The passengers were kept on board the ship practically as prisoners until an answer was received from the Sanitary Authority by post or by wire. In that way, and in that way only, was it possible to get correct addresses.

Dr. ARMSTRONG : That system will soon stop the immigration of Jewish paupers.

Dr. DAVIES (Swansea) proposed—"That keepers of sailors' boarding and lodging-houses and of sailors' homes he required to enter the names and addresses of sailors in such houses in a book, and that such book be open for inspection by Officers of the Port Sanitary Authority."

Dr. MASON seconded the motion, but the CHAIRMAN and other members of the Conference expressed doubts as to the wisdom of the proposal, and it was withdrawn.

(17) Dr. ARMSTRONG proposed—"**That it is desirable that the crews of all ships, whilst in infected or suspected ports, should be prevented from going on shore.**"

Dr. MASON seconded the motion, which was carried.

DISINFECTION.

The CHAIRMAN said the first point to which their attention was directed under the head of disinfection was, the best method of dealing with bilge water, ballast of fresh water, or fresh water sand. It had been felt by several Port Medical Officers that if a vessel came from an infected port, and was likely to carry infection in any way at all, the most dangerous source would be in her ballast or sand taken from an infected river, because they must assume these rivers to be infected if they took a town like Hamburg. The Local Government Board had been approached on this subject, and they had got as far as this, that in the Cholera Regulations which would shortly be issued, a section had been inserted which gave power to the Medical Officer of Health to deal with salt water or fresh water ballast, or ballast sand, or gravel of recent marine or river origin. It was very important that they should have a distinct and definite resolution to that effect from the Conference. The only way to get rid of ballast would be to discharge it low down the river at a distance from the town. They had nothing to do with the question at whose expense the ballast should be sent to sea. A ship that brought such ballast in should take it out again.

Dr. DAVIES (Swansea) did not think they could get rid of the question of expense.

The CHAIRMAN : You can when the order is issued.

Dr. DAVIES said that if ballast were discharged from a vessel which had a ballast tank, the ship would turn over, and in order to get rid of 100 tons of ballast, they would have to put in 100 tons of cargo.

The CHAIRMAN considered that this question did not arise. When once they had an order against ballast water, ballast water would not be brought in from infected ports.

Dr. WALFORD conceived the possibility of a master being in entire ignorance as to where his sand ballast was obtained.

The CHAIRMAN : The onus of proof must always rest with the master of the vessel.

Dr. ARMSTRONG : In the majority of vessels some of the ballast water can be pumped from the tanks out at sea, and replaced by sea water.

Dr. MALCOMSON said he had seen a ship with a list of 45 deg. while ballast water was being pumped out near the quay.

(18) Dr. ARMSTRONG moved—"**That the discharge of fresh water ballast, or fresh water sand ballast, from an infected port into any British port be prohibited.**

Dr. HARRIS seconded the motion.

The CHAIRMAN referred to the colliers coming from the north. Those vessels brought coal, and went back in ballast, getting their ballast as they went down the Thames. What they wanted was power to get rid of ballast which might be infected.

The resolution was agreed to.

Dr. ARMSTRONG introduced the question of the disinfection of ships' holds, and maintained that there was not in England any proper means of disinfecting a seriously infected ship. He did not think that any place in the world, except New Orleans, had provided such a system. In Louisiana they had public quarantine stations, and the charges were borne by the shipowners. There was there an eight-thousand gallon tank of perchloride of mercury. This meant a very large outlay, but it was the only way in which ships' holds could be thoroughly disinfected. In England we had no arrangement at all comparable with that, and they might have a ship come in with a lot of Cholera cases on board, in which the Cholera *dejecta* might have got down into the hold of the ship. Could they conscientiously say that they had an apparatus to deal satisfactorily with such a case? If at the other side of the world it was necessary to make elaborate preparations for disinfection in cases of Cholera and yellow fever, it seemed to him to be equally important that similar arrangements should be made in this country. The question ought to be dealt with from a national point of view, and it was not one they ought to shrink from facing. Every Port Sanitary Authority should be equipped with the means of thoroughly disinfecting a ship that was known to be seriously infected. Fortunately, the difficulty had not arisen, but it might occur at any moment.

Dr. WILLIAMS considered that our present means of disinfection were a farce. It it was a very difficult thing to disinfect a vessel with 2,000 tons of cargo.

(19) Dr. ARMSTRONG suggested that a Sub-Committee of the Conference should be appointed to consider this subject, and moved: "**That more efficient disinfection should be provided.**"

Dr. WILLIAMS seconded the proposal, which was adopted, and it was further resolved to appoint a Sub-Committee, consisting of the Chairman, Dr. Armstrong, Dr. Mason, Dr. Malcomson, Dr. Davies (Bristol), Dr. Walford, and Dr. Wynne, to consider and report to the Conference on the question of disinfection.

The CHAIRMAN said the next question was the disinfection of rags. By the new Cholera Regulations, rags might be admitted on disinfection, and if Sanitary Authorities did not at once make provision for the disinfection of rags, the importation of rags would take place at other ports.

It was agreed that the whole of the following questions should be referred for consideration to the Sub-Committee—"Disinfection, &c.—The best method of dealing with bilge water, ballast of fresh water or fresh water sand.—If sent to sea, at whose expense?—Ships' holds — cargoes — rags, shoddy, old bagging, flax-waste.—If cargoes are to

be destroyed, should compensation ever be given, and, if so, in what cases?—What are the best disinfectants for different purposes.—Objection to particular disinfectants in certain circumstances (danger, cost, &c.)?—When and how can steam be utilised for disinfection?—Should every Port Sanitary District be provided with a special disinfecting station for dealing with ships and cargoes, and, if so, what should it comprise?

At the suggestion of the CHAIRMAN, the following subjects were also referred to the Sub-Committee:—Disposal of infected corpses: Best mode of (interment, sea-burial, or cremation?) Precautions to adopt.—Disposal of other infected articles not capable of disinfection: Perishable cargoes, &c.

HOSPITALS.

The next subject on the Agenda was that of "Hospitals—Best position and kind for ports—Number of beds to provide requisites and appliances of."

Dr. MALCOMSON asked for an expression of opinion from gentlemen present as to the best type and site for a hospital. At Middlesbrough the Port Sanitary Authority fitted up an old ship as a hospital. In the middle of the recent scare they found the ship was collapsing, and they were thus left in a dreadful position. Fortunately, at the mouth of the river, the Commissioners had eight cottages, and these were made available for hospital purposes. He would like to get some information as to what was the best type of hospital for a port of the same size as Middlesbrough.

Dr. GRIFFITH said another question was, where should hospitals be situate?

Dr. SIMPSON described the hospital built at Portland about 12 years ago at a cost of 7,000*l*. This hospital might be utilised by either the urban or rural Sanitary Authority, but it was erected primarily as a Port Sanitary Hospital. It was constructed on the pavilion principle, the two pavilions being divided into two large wards, each containing six beds, so that altogether there was accommodation for 24 patients, with 3,000 cubic feet of air space for each. There was also a probationary ward. He reserved one block for typhoid cases, and the other for scarlet fever. Internally, the building was as complete as it possibly could be. It stood almost on the sea shore.

Dr. DAVIES (Bristol) was satisfied that if an Authority had a site, a permanent hospital was the best thing to have, but where they could not get a site they must have a floating hospital. He confessed that at Bristol he did not know where to put a floating hospital, and he did not think the question of hospital construction was one with which the meeting could deal. Each Medical Officer must decide what should be done in his own district. At Bristol there were only 12 beds in the hospital, and he thought that number should be doubled.

Dr. CAMPBELL said that if they mixed up the question of Cholera with the question of infectious diseases generally, people would not enter the hospitals, because they had such a dread of Cholera.

Dr. WOOD (Sunderland) narrated a remarkable experience he had in that port in endeavouring to establish a hospital for Cholera cases. Public agitation—in the course of which the people had threatened to throw him and his hospital into the sea—had led to two hospitals being taken down, and now the port had no hospital at all.

Dr. ARMSTRONG had always regarded it as an anomaly—of which London set the most glaring example—that people should go beyond their own district to provide a hospital. London had no right, and it was ridiculous that she should send her infectious cases to the river. On the Tyne there had always been a floating hospital. It was built on a pontoon, and contained 30 beds for infectious cases, and cases from the river only were admitted. The Port Authority was, however, making accommodation for 100 beds next year for shore patients. The foundations and drainage were already complete, and the new building would be erected immediately a case of Cholera occurred on shore.

Dr. WYNNE stated that at Lowestoft they were caught in an unprepared state. They decided against a floating hospital, and had an old wooden building run up. He had since recommended a corrugated iron building to contain 12 beds, but a desire for economy had led the Port Authority to be satisfied with a four-bedded hospital, which had up to the present been sufficient. He was opposed to a floating hospital, because some of the Cholera discharges might find their way into the river.

Dr. ARMSTRONG said the same thing might occur in the case of a hospital on shore. The Cholera discharges should in each case be rendered innocuous.

The CHAIRMAN said it was hopeless to dream of coming to a decision there on the question of land or floating hospitals. He was not prepared to take up floating hospitals generally. Such places might be of use temporarily when dealing with Cholera, but for the permanent treatment of disease, he would not for a moment consider the question of floating hospitals.

(20) Dr. MASON moved—"**That it is the imperative duty of every Port Sanitary Authority to provide forthwith proper special hospital accommodation for the treatment of Cholera, and for the isolation of suspected cases.**"

Dr. MALCOMSON seconded the motion, which was carried.

Dr. DAVIES (Bristol) moved that the Sub-Committee appointed should also be asked to consider what the proportion of hospital accommodation should be to the tonnage of the port.

The CHAIRMAN said the Sub-Committee would have a sort of roving commission, and would deal with this and other subjects.

THE COST OF CHOLERA PRECAUTIONS.

The CHAIRMAN said the next question—at whose expense should Port Cholera Defences be maintained?—was a very serious one, even for large towns. It was a serious question for London, where the keeping up of defences against Cholera, which had not appeared, involved an extra expenditure of about 2,000*l.* a year; but as long as the system was worked on an economical footing nobody cared, because money spent in combating an epidemic was money well spent. The precautions must be kept up during next year; but already there were very marked signs that unless some relief were given by the Government, the smaller ports would not be able to maintain the precautions that were necessary, in which case grave danger would ensue. This was becoming a serious question, and it was one on which the Conference ought to give a decided opinion one way or the other.

Dr. MALCOMSON said the strongest instruction he received from the Port Sanitary Authority he represented was on this subject of expense. It bore peculiarly hard upon

Dr. MALCOMSON pointed out that none of the regulations applied to stowaways, and in one case which came under his knowledge a stowaway caused a serious outbreak of small-pox.

Dr. ARMSTRONG referred to another case where diarrhœa occurred on board a ship coming from Cronstadt. No reference was made to the fact in the log, and when the Captain was spoken to, after going ashore without medical inspection, he said he did not call diarrhœa sickness, while, as they all knew, diarrhœa, in the case of a ship coming from an infected port, was a very serious illness.

(9) After further discussion the motion was passed in the following amended form :—

" That any false answer to the Customs' Officers' questions as to the health of the crew on the voyage and on arrival should be penalised, and that the Port Sanitary Authorities should have legal powers to this end."

(10) On the motion of Dr. ARMSTRONG, seconded by Dr. DAVIES (Swansea), it was further resolved, **" That false answers given by the master of a ship to questions of the Medical Officer of Health or of any Officer of the Port Sanitary Authority, having reference to the health of any person on board at any time, during the voyage, or on arrival, be made penal, and that the Port Sanitary Authority have power to enforce this provision."**

(11) It was also agreed, on the proposal of the CHAIRMAN, **" That all ships from infected ports, or suspected ports, be treated as infected until they are found to be otherwise."**

Dr. DAVIES (Bristol) said the penalty fixed in the last Cholera order was entirely inadequate. Instead of 50*l.* it ought to be 200*l.*

The CHAIRMAN entirely agreed that a penalty of 50*l.* was insufficient.

Dr. DAVIES moved that the minimum penalty should be 200*l.*

The CHAIRMAN : It is not competent to anyone to move a minimum penalty, because the minimum penalty must always be fixed by the magistrate.

(12) Dr. DAVIES urged that the penalty should be increased to such an amount as would make it a real obstacle to the infringement of the regulations. He proposed **that the penalty should be £200.**

Dr. LAWTON (Poole) seconded the motion, which was carried.

Dr. ARMSTRONG considered it was very desirable that all vessels from infected ports should be required to display signals on arrival. At Newcastle very great difficulty had been found in learning whether a ship coming in was one which the Port Sanitary Authority ought to look after or not, and, in his opinion, vessels should not be allowed to come from ports like Hamburg unless the Port Sanitary Authority knew all about them.

The CHAIRMAN : This would be very desirable provided the infected ports were known, but my experience was that during the third week of the epidemic in Hamburg, masters of vessels coming into the Thames from Hamburg swore that they knew of no Cholera there, and they brought home clean bills of health from responsible officers.

Dr. WILLIAMS : The same thing has happened at other ports.

Dr. WYNNE said fishing vessels were not provided with a proper flag to show that they had been at foreign ports, and that they had no sickness on board.

Dr. Armstrong urged that in the case of vessels coming from Hamburg, there should be more than one inspection. At Newcastle-on-Tyne the Medical Officers were boarded in an hotel on the quay. He intended to recommend to his Port Sanitary Authority that they should have a boarding station of their own below the Customs' boarding station. The question of suspected ballast water was one of the ugliest questions with which they had to deal. Five or six hundred tons of infected ballast water could not be disinfected by perchloride of mercury, because if they did that they would destroy all the fish in the river. The suspected ship must, therefore, be put out to sea, where the infected water should be pumped out and fresh water taken in.

Dr. Wynne said that at Lowestoft they had arranged for constant duty by appointing three officers, who were like special constables, and who were paid by fee.

Dr. Davies : In Bristol we have a similar arrangement.

(7) Dr. Armstrong moved : **"That it is desirable arrangements should be made for prompt and efficient medical inspection of all vessels arriving from infected ports, and for their subsequent supervision."**

Dr. Wynne seconded the motion, which was adopted.

The Chairman : The next question is "False reports as to health." False reports to H.M.'s Customs, as you are all aware, cannot be legally dealt with—that is to say if H.M.'s Customs get satisfactory answers to the usual questions—"Are you all well on board?" "Have you had any sickness on board?"—and at the same moment there is a man on board suffering from an infectious disease, no proceedings can be taken by the Customs, because they have no legal power. That question is now before the law officers of the Crown, and the desirability of a change is being considered. It would be a wise thing if this Conference were to move, in accordance with the suggestion of Dr. Armstrong, that powers should be obtained by Her Majesty's Customs for dealing with false answers to quarantine questions.

(8) Dr. Armstrong proposed—**"That it is desirable legal power be obtained to penalise the giving of false reports in answer to the quarantine questions put by Her Majesty's Customs."**

Dr. Malcomson seconded the motion.

Dr. Harris said a penalty of 50*l.* was already provided in the case of a false answer being given to the last question.

The Chairman said the questions were clear, and they covered everything. The answers should be given, but there was at present no power to deal with a false answer.

Dr. Walford alluded to a case where a false answer was given at Cardiff to the Customs while the Medical Officer was on board. He tried to induce the Customs to take proceedings, but he found they had no power. A representation was, however, made to the Board of Trade, which took proceedings against the Captain for making no entry in the log, and a penalty was inflicted for that offence.

The Chairman : That is what is done in the port of London, but that does not meet the case, because the case might be entered in the log before proceedings could be taken by the Board of Trade.

The CHAIRMAN said there seemed to be no difference of opinion on the subject, but
(5) he thought the resolution should be adopted in the following form :—"**That it be a recommendation from this Conference to a Conference to be called of all Port Sanitary Authorities that they approach the Local Government Board to obtain compulsory powers for themselves for the detention, for medical inspection, of ships coming from infected and suspected ports, and that such vessels be not released until a certificate has been given by the Port Medical Officer of Health.**" He said the opinion of the Local Government Board was that such detention should not exceed six hours in the case of the examination of a vessel which was not infected—three hours before the vessel was arrested, and three hours afterwards. If a vessel were infected, of course the period of detention was unlimited. This resolution gave power to the Local Government Board to fix the period of detention for all vessels arriving from infected ports, but it did not go into the detail whether the detention was to be through the Customs or through the Port Sanitary Authority. It merely affirmed that the power of detention should exist.

The resolution, as amended, was unanimously adopted.

The CHAIRMAN informed the Conference that the next point was the "Duty and position of Medical Officers of Health when on board a ship having no clean bill of health." He said it made no difference to them whether a vessel had a clean or a foul bill of health. The time had gone by for considering the question of bills of health. Such bills were not of the slightest value in this country. It was the rule to demand a bill of health from certain ports in the Mediterranean, but it was not necessary to bring a bill of health from Hamburg when Cholera was raging there.

(6) Dr. ARMSTRONG proposed, "**That the detention of the Port Medical Officer of Health on board a vessel not having received pratique or a quarantine certificate under the Quarantine Act is objectionable and ought to be abrogated.**"

Dr. WILLIAMS seconded the motion, mentioning the fact that Cholera did not come under the Quarantine Act as the reason for the resolution.

The CHAIRMAN : What we are doing here is gradually to remove the present quarantine powers. Everything suggested to-day is in the direction of removing the onus of medical inspection from the Customs to the Port Sanitary Authority—a most desirable change.

The resolution was adopted.

The CHAIRMAN : Then comes the question of the arrangements necessary for prompt and efficient medical inspection. I think that should be considered from the point of view of what is an ideal system rather than as to what can be carried out in a particular port. I think we ought to come to a resolution in favour of a theoretically ideal system rather than a maximum which we can carry out, which generally becomes a minimum. In large ports a Medical Officer should always be on duty. We have a Medical Officer at Gravesend day and night, and that has been kept up since the end of August, and it will probably be continued to the end of next year. In some ports that is not only impracticable, but it is unnecessary ; but that should be the ideal arrangement, modified to suit each individual port. In the case of a port at which a vessel arrives once a week, an arrangement might be made for the Medical Officer to be summoned.

Dr. HARRIS agreed that in large ports two Medical Officers at least were required, and some accommodation ought to be provided for them on the spot.

Acts. He wrote to the Local Government Board about the matter after he had left the ship, finding no sickness on board, but the Board were unable to suggest any way out of the difficulty.

Dr. DAVIES (Swansea) said that he had been placed in a similar position in boarding a vessel in quarantine which was not infected.

Dr. BATELY stated that he had succeeded in detaining a vessel by means of the Cholera order.

Dr. MALCOMSON: I am afraid I made my law as I went along during this last epidemic. Ships came up, and gave me a great deal of trouble. I had a meeting with the Customs' Officials, and pointed out the desirability of coming to some arrangement, under which I persuaded them to suspect every ship which I told them to suspect. The result was that the vessels I suspected were detained until the Customs' Officers had been on board and "rummaged" her while I was present. The pilotage authority also gave assistance, and passed a resolution that they would deal very severely with any pilot who disobeyed the Sanitary Authority of the port.

Dr. HENSLOWE-WELLINGTON considered that, if possible, some distinction ought to be drawn between the larger and the smaller ports, and to this end he suggested that each Port Sanitary Authority should issue bye-laws. In his own case he was sometimes nine miles away on his country rounds when a ship was coming in.

Dr. ARMSTRONG said the statement just made showed the danger to which the whole country was exposed through places like Wisbech, and it was clear that the small ports were the doors through which large mischief might enter. If each port were allowed to make its own bye-laws the little ports would look at the matter from a purely local standpoint.

Dr. HENSLOWE-WELLINGTON added that he often had to travel 15 miles by water to get to a vessel, and in order to avoid a second journey he had frequently been out on the sea tossing about the whole of Sunday. The Medical Officer at Lynn would entirely confirm him in this statement.

Dr. WYNNE desired to emphasise the fact that the dilatoriness of small ports was one of the great dangers to the United Kingdom. In Lowestoft the jurisdiction of the Customs did not extend beyond the piers and the harbour, the present boarding station being inside the harbour; but it was now proposed that the boarding station should be fixed outside in the roads. The Customs' Authorities had assisted him in every possible form, but as their power did not extend into the roads, it was quite possible for a fishing boat with Cholera on board to run straight into a crowded fishing fleet, and to be in port before it could be detected. What was wanted at Lowestoft, therefore, was that the powers of the Customs should be extended into the roads, so that they might have authority to detain vessels.

Dr. CAMPBELL (Gloucester) was sure that if a representation were made to the Local Government Board by each district where anomalies occurred, such as Wisbech, the Board would be exceedingly pleased to re-arrange the whole district, to the satisfaction of everyone. He made a representation to the Board in connection with his own district, and asked, "If a ship passes Bristol, and comes into Gloucester, what am I to do?" The result had been that the Board was going to re-arrange the Bristol Channel district altogether.

night, should be inspected. It was impossible to do that at Bristol without the use of a steam launch, and he was glad to say that the Port Sanitary Authority had bought him such a launch. He considered that every important port should place the same facilities in the hands of its Port Medical Officer.

Dr. Bately (Yarmouth) entirely agreed that inspection at night in open roadsteads was impossible.

Dr. Wood (Sunderland) stated that during the last scourge he was thrown overboard about 11 o'clock at night when going to inspect a ship.

Dr. Henslow-Wellington (Sutton Bridge) informed the Conference that the practice at Wisbech was to keep a ship until it could be conveniently inspected, and he shared the opinion that inspection at night was most difficult, while night and day inspection could not be carried on unless the Medical Officer had assistance.

The Chairman pointed out the only question before the Conference at present was whether it was desirable that inspection should be kept up by night as well as by day. It was obvious that no single Port Sanitary Officer could inspect by night as well as by day, and the resolution implied that a Medical Officer should always be on duty.

Dr. Davies (Bristol) mentioned that he had two assistants.

Dr. Mason said he had the same assistance at Hull.

Dr. Armstrong thought that none of them should speak from their own standpoint merely. It was obvious that several of the gentlemen who had spoken could not carry on inspection at night, and no one man could do the work. At Newcastle they had a comparatively narrow river entrance, which could be easily watched and guarded, but, nevertheless, it ought to be watched by two men doing nothing else. The wider the roadstead the more men were required. Even on the Tyne, where the entrance was so narrow, one ship had got in while the Medical Officer was on board another ship. Every Port Authority ought to have a steam launch, and if they did not inspect at night they gave the crews opportunities to get ashore unobserved. No doubt there were some places where night inspection might be impracticable, but that was no reason why they should not in the resolution affirm the general principle of night inspection.

Dr. Simpson (Weymouth) said that he worked in most excellent accord with Her Majesty's Customs Authorities, who allowed him to use their excellent launch, and arranged for him to see every vessel which they boarded.

Dr. Henslowe-Wellington: Has it been brought out that there is no power to detain a vessel coming from an infected port?

The Chairman: By law, there is absolutely no power to detain vessels. It may be a question of arrangement.

Dr. Harris (Southampton) stated that a large number of vessels were constantly entering that port at night, and as Medical Officer he had to be on duty 18, 20, and even 22 hours. He had to sleep in all manner of places in order to prevent vessels getting into the dock without inspection.

The Chairman: I am afraid that is the experience of everyone, but if inspection is kept up day and night, it means at least two Medical Officers.

Dr. HARRIS : In foreign ports ships arriving at night have to wait.

On a show of hands being taken, the meeting affirmed the principle of inspection being kept up by night as well as by day. Five Medical Officers voted against the proposal, on the ground that in the ports to which they were attached night inspection was impossible.

(2) The CHAIRMAN said the next point suggested was, **"That medical inspection be carried out on every ship coming from an infected port."** Obviously that followed upon the first resolution.

Dr. HENSLOWE-WELLINGTON suggested "That a list of infected ports should be issued, and sent to Port Medical Officers from time to time." He did not know whether such a list was published in the *Shipping Gazette* or any other paper.

Dr. BATELY also considered that it was very important they should know what was going on at an infected port. They ought to be told when a port became infected, and when it was declared free.

(3) Dr. HENSLOWE-WELLINGTON moved, **"That an official list of infected ports should be issued from time to time by the Local Government Board."**

Dr. WYNNE said that at a very early period he applied to his own Sanitary Authority for such a list, and the reply was that he must watch the daily papers, and for all practical purposes he was inclined to think that that was the only information that the Local Government Board itself had to go upon. In foreign ports the desire was to conceal the existence of disease as long as possible, and there was no official source from which such a list could be obtained.

Dr. DAVIES (Swansea) regarded it as very important that they should have an official list, as a Port Medical Officer might involve his Authority in a serious claim for damages for detaining a vessel on insufficient grounds.

Dr. ARMSTRONG said this discussion had raised a much wider question, namely, that of compulsory notification. He thought the Consuls ought to supply information as to ports that were known to be infected, and he did not think reasonable objection could be taken to the compulsory notification of diseases of a certain class. If that were done, there would not be the slightest interference with trade, and other ports would be put on their guard.

Dr. WILLIAMS was of opinion that the only way of dealing with the matter was through the Consuls and the Foreign Office. He was sure that Consuls knew when Cholera was in their ports.

Dr. ARMSTRONG : No, they do not, and that is just where the mischief arises.

Dr. HENSLOWE-WELLINGTON said that if notification were to go through so many hands there would be a loss of time before it reached the Local Authority.

The CHAIRMAN : An official list published by the Local Government Board is theoretical and imaginary. It is impossible to carry it out. No Government could undertake it, and no Government would undertake it. At the present moment the whole of the littoral from St. Petersburg to Lorient is infected with Cholera. If any Government Department issued a notice that all those ports are infected, where should

we be with regard to British Commerce? Hamburg is officially declared free from Cholera, but there are cases of Cholera from Hamburg now. If you are to have a list of infected ports--and such a list is desirable for our own purposes—it must be issued on our own responsibility, because the Government would not, and could not, declare Hamburg to be infected at the present moment, although everybody knows that it is. Therefore, I think that the resolution in favour of an official list being published by the
(3a) Local Government Board should not be passed. I would move as an amendment, "**That Port Medical Officers should themselves issue a list of infected ports.**"

Dr. MALCOMSON did not see why Port Medical Officers should be more brave than the Local Government Board, and in his opinion the Board itself ought to issue the list. He had had clean bills of health from foreign ports where case after case of Cholera had existed. He considered that they were entitled to more help from the Local Government Board.

Dr. DAVIES (Bristol) seconded the amendment, believing that the proposal it contained would be generally satisfactory. He did not think they would ever get an official statement from the Local Government Board.

The CHAIRMAN : You may take it as absolutely certain that we should not get such a list from the Local Government Board. This would be a matter for the Port Authorities, and it is hoped that we shall be able to induce them, later on, to hold a Conference at which the whole question may be discussed.

Dr. WYNNE said that at Lowestoft, fishing boats running in at every hour of the night and day, gave them the greatest amount of anxiety and trouble, and for practical purposes he had taken as an infected port the whole littoral from Denmark to Calais.

Dr. GRIFFITH stated that the same difficulty was experienced at Milford Haven.

The CHAIRMAN said that the list which he suggested might be made up from any available sources, and issued from time to time, as circumstances required, by a Central Authority appointed by Port Medical Officers.

Dr. ARMSTRONG was very glad that the Chairman had proposed the amendment, and hoped that the Port Sanitary Authority of London would undertake to issue the list. They ought to consider among themselves what ports should be included.

The original resolution was not pressed, and the amendment was adopted as a
(3b) substantive proposal, it being further decided, "**That the list of infected ports should be issued by the Port Sanitary Authority of London.**"

The CHAIRMAN : The next question is a most important one—" Power to require ship-masters to moor their ships for inspection." In the Cholera regulations there is no provision for any detention of vessels beyond the Customs' detention and the reporting of vessels which are infected. When once they are considered to be infected by the Customs, you have absolute power to detain them as long as you like. It does seem desirable that in the case of all vessels coming from an infected port there should be a provision for the detention of such vessels by mooring, anchoring, or slowing, as the Medical Officer of Health on duty may desire, while the vessels are inspected. If you are going to have the power to detain a vessel, it is of course necessary to remember the very important hint which the Lord Mayor gave us this morning, and I am quite sure you are all prepared to give the assurance that you will do nothing which is calculated to

interfere with commerce. A practical suggestion has been made, and it is now being carefully considered by the Local Government Board—that the time of detention for a ship coming from an infected port, or for a suspected ship, should be half the time for a ship which is known to be infected, as a maximum, and that it should be left to the discretion of the Medical Officer to limit that time as much as possible. I think we shall all be agreed upon the point that there should be power of detention, and the practical limit of that detention might be a matter for suggestion from every Medical Officer present.

(4) Dr. Mason moved—"**That it be a recommendation from this meeting to the Conference that the Port Sanitary Authorities should approach the Local Government Board with a view to obtain compulsory powers for the detention, for medical inspection, of vessels coming from an infected port and of suspected vessels.**" He referred to his own experience at Hull, where vessels called and passed on to Goole. At Hull they had no power to stop suspected vessels. The ships went past them, and that was where danger was caused. He urged that a shipmaster should be required to obtain a medical certificate before entering dock, and that if he neglected to do so he should be fined. On emigrant ships he often had to inspect 200 or 300 persons, and therefore he could only inspect such vessels by day. He thoroughly agreed that medical inspection should be continued both day and night, but in such cases inspection at night was impossible.

Dr. Harris seconded the motion, and said that at Southampton they had very large vessels coming in, and unless they had the power to detain a suspected vessel they were helpless. The quarantine certificate was given as a mere matter of form, and was therefore useless. Medical Officers were willing to study the commerce of every port, but, if they were to do their work thoroughly, they must have some definite power, which would not put one port at an advantage over another, because if they were lax at one port and strong in another, ships would leave the places where they were strong, and go to those where they were weak. The Agents of Shipowners might render great assistance in this matter by telegraphing to Port Medical Officers to notify the incoming of a vessel, and if that were done a period of six hours, or even three hours, for detention would be ample, while in many ports it would not mean a detention of more than an hour. The cross-Channel boats were as dangerous as any, because the passage was very short. He had had to go down the river when it was pitch dark at night and wait for the boats, because, if he did not, the Customs would release the people, and they would be in London without any particulars being taken. He agreed that it was important a medical certificate should be required before a ship entered dock, or the ship, instead of going into harbour, should be compelled to go to a mooring buoy.

Dr. Walford (Cardiff) remarked that before detention could be effectually carried out, some alteration would have to be made in the Quarantine Act. Although they might detain a vessel, they were unable to leave her until she had been cleared by the Customs. The 17th Section of the Quarantine Act rendered them liable to imprisonment if they left a vessel before it was discharged from quarantine. He suggested that some representation should be made to the Local Government Board with the view of getting that absurd enactment amended.

The Chairman : That section of the Act undoubtedly applies to Port Medical Officers, but I have no doubt that they would have the courage of their position. Personally, I have ignored the section altogether, with the result that there has been no interference.

Dr. Armstrong related a personal experience of boarding a vessel under the Quarantine

Dr. COLLINGRIDGE, having assumed the Chair, said they had many important points to determine. They had no time for speeches, and it was necessary that there should be as little discussion as possible, except on material points.

MEDICAL INSPECTION.

The first subject brought before the Conference was medical inspection—should this be kept up by night as well as by day?

The CHAIRMAN invited gentlemen present to move definite resolutions applying equally to all ports. Those resolutions having the weight and authority of all the Port Medical Officers there, would be submitted to the sanitary authorities, and be the basis for those authorities to confer upon, and, if necessary, to make a statement to the Local Government Board. If that were done in a united way, there would be no doubt as to the effect it would have upon the Local Government Board; they would get all they wanted in the simplest and easiest way. There would be very little difference of opinion on the subject of medical inspection, but the first point was whether it should be kept up by night as well as by day. In London it must undoubtedly be kept up by night as well as by day.

(1) Dr. ARMSTRONG (Newcastle-on-Tyne) moved, **"That medical inspection be kept up by night as well as by day."** The motion having been seconded,

Dr. WYNNE (Lowestoft) was inclined to doubt whether a ship could be properly inspected by lantern light.

Dr. DAVIES (Swansea) held that the inspection of vessels at night must largely depend upon the position and character of the port. In Swansea, with an open roadstead, it was quite impossible to inspect a vessel during the night. Therefore, if the resolution applied to all ports, it would not be possible to carry it out.

Dr. MASON (Hull) said there were considerable difficulties in the way of night inspection at Hull, where they had also Goole to consider. On his advice, the Port Sanitary Authority had approached various owners of shipping in Hull and Goole, and they had cordially concurred in the suggestion of the Port Sanitary Authority that vessels should only be inspected during the daytime. If vessels arrived during the night they remained until morning for inspection.

Dr. GRIFFITH (Milford Haven) stated that it would be nearly impossible to inspect vessels at that port at night. The Haven was over 10 miles long, and the Medical Officer had to go to vessels in open boats.

Dr. WILLIAMS (Plymouth) said there were very great difficulties in the way of night inspection at that port. During the past two or three months he had carried out night inspection, but the men had to be turned out of their bunks, and the lights were very bad, especially in sailing vessels.

Dr. MALCOMSON (Middlesbrough) informed the Conference that he had carried out day and night inspection, because ships were coming into that port at all states of the tide; but he thought the question ought to be one of local option, in order to suit the requirements of different ports.

Dr. DAVIES (Bristol) said it was most important that every vessel, arriving day or

Reprinted from the "Shipping and Mercantile Gazette" of the 17th December, 1892,

By Order of the Port of London Sanitary Committee.

CHOLERA PRECAUTIONS FOR 1893.

CONFERENCE OF PORT MEDICAL OFFICERS.

A Conference of Port Medical Officers of Health was held on Saturday, the 17th December, 1892, at the Mansion House, under the Presidency of the Lord Mayor, to consider the subject of Cholera Precautions. The following Port Medical Officers of Health attended :—Drs. W. Collingridge, London ; H. E. Armstrong, Newcastle-on-Tyne ; J. C. Wood, Sunderland ; E. Davies, Swansea ; F. W. Williams, Plymouth ; G. Griffith, Milford Haven ; W. Watson, Rochester ; J. D. Fausset, Fleetwood ; T. G. Styan, Ramsgate; G. Brown, Colchester ; D. S. Davies, J. C. Heaven, and F. Tratman (Assistants), Bristol ; J. Bately, Great Yarmouth ; W. A. S. Wynne, Lowestoft ; R. P. Simpson, Weymouth and Portland ; H. Gurney, Harwich ; J. Campbell, Gloucester ; E. Walford, Cardiff ; G. S. Elliston, Ipswich ; F. C. H. Piggot, Teignmouth ; A. W. Harris, Southampton ; H. A. Lawton, Poole ; R. Henslowe-Wellington, Sutton Bridge, Wisbech ; J. W. Mason, Hull ; L. A. Malcomson, Middlesbrough ; C. J. Evers, Faversham ; E. P. King, Chepstow ; and W. Clegg, Boston.

The Lord Mayor said he was proud to meet at the Mansion House gentlemen who had so much in their hands the health of the people. In the Port of London they had endeavoured during the late scourge to keep clear from contagion, and in that he thought they had perfectly succeeded. What they had to do now was to prepare for the future. He was quite sure that gentlemen coming from other ports were equally energetic, and he congratulated them on coming there into Conference in order that they might arrange matters among themselves so as to carry on the work in an intelligent and uniform manner. He might, perhaps, at the same time, be permitted to say that whilst they should be very careful to prevent disease entering our ports, they should at the same time remember that it was necessary to exercise their powers with gentleness and without unnecessary severity ; otherwise they might not only defeat their own objects, but bring down upon themselves perhaps the ill feeling of a very large number of the population. Questions had been raised on this matter, and he considered it his duty, as Lord Mayor of the City of London, to recommend to all those who were placed in the position of Port Medical Officers that, while they were carrying out their duties, they should exercise them without unnecessary severity.

Dr. Collingridge, on behalf of the Conference, expressed the very great pleasure and satisfaction the Port Medical Officers had at being received by his Lord-hip. It was felt, and naturally felt, by all Port Medical Officers that the meeting at the Mansion House would carry with it much weight and prestige, and more particularly when presided over by the Lord Mayor, not only as Chief Magistrate of the City, but as no mean authority on sanitary matters. The interest his Lordship had always taken in sanitary matters was the primary reason in asking him to accept a position, for which they were very grateful to him.

The Lord Mayor having to preside at the Mansion House Police Court, asked the Conference to appoint a Chairman in his absence, and Dr. Collingridge was unanimously chosen to take the Chair.